



# **Defense Information Technology: An Integrated T&E Model**

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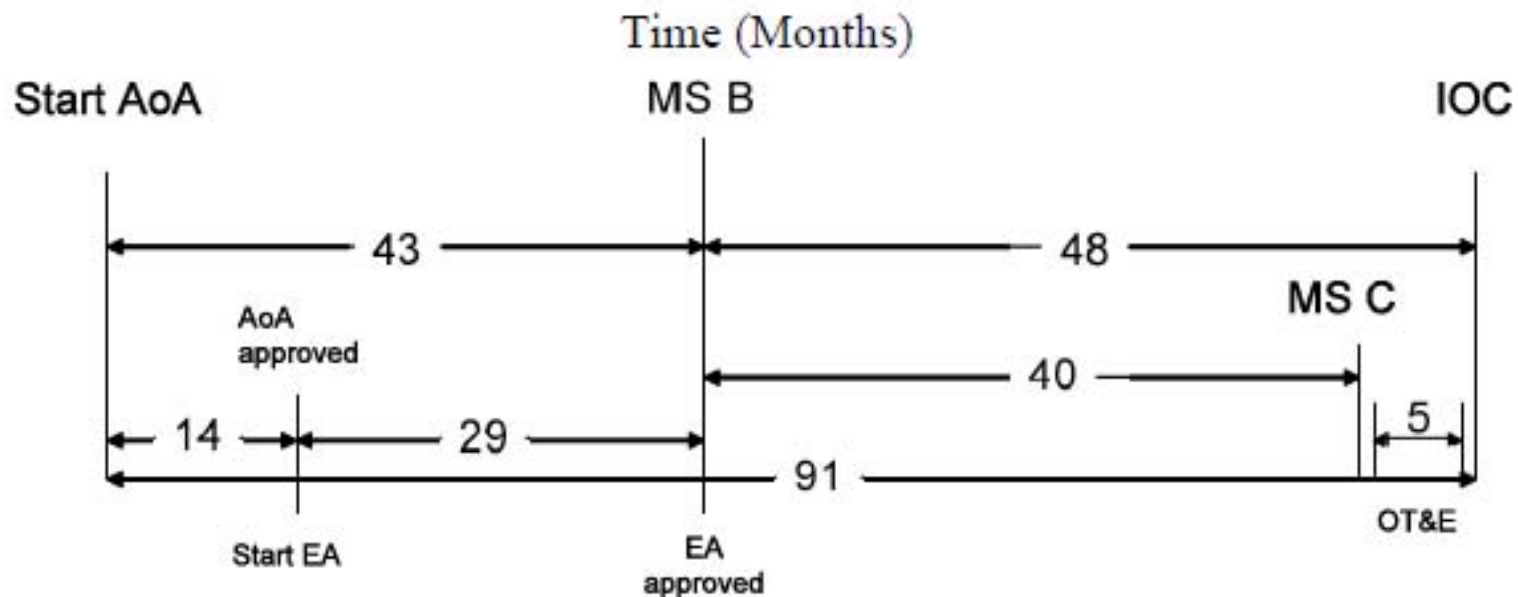
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# The Problem

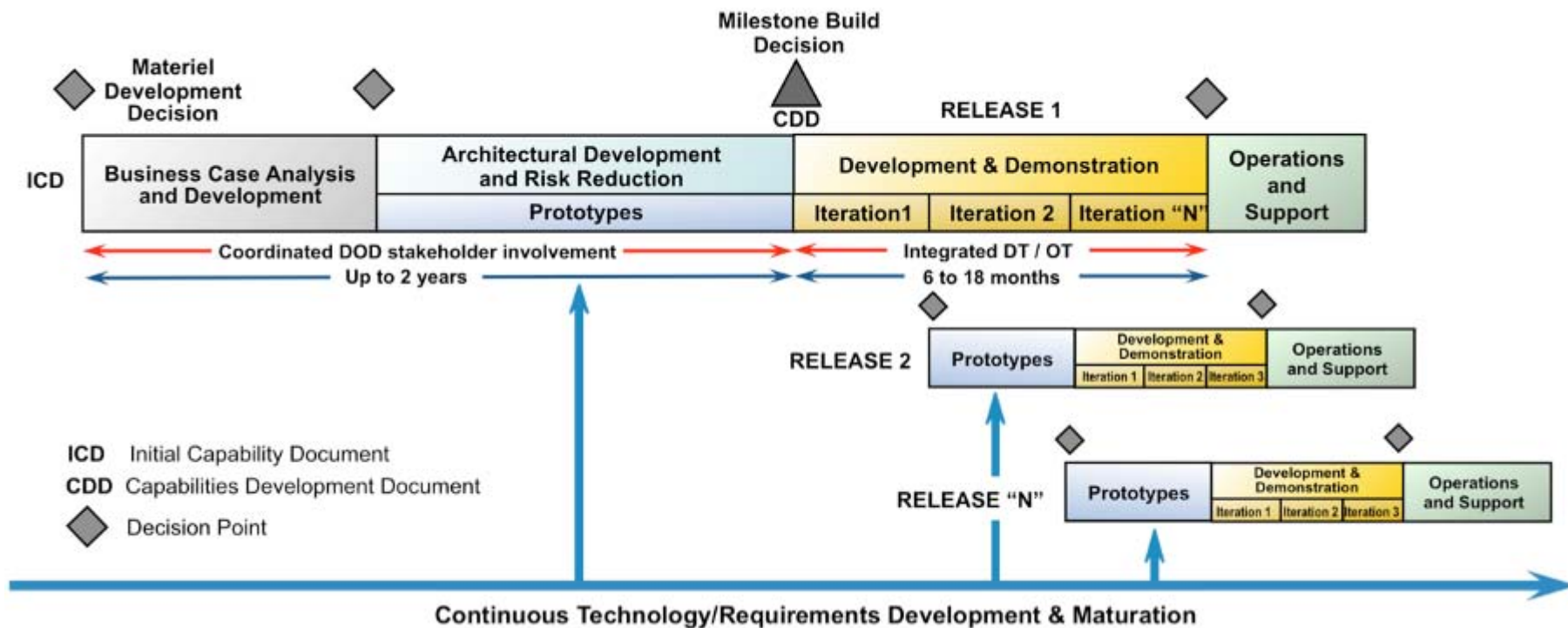


Defense Science Board: DoD Policies and Procedures for the Acquisition of Information Technology, March 2009

**“An analysis of 32 major automated information system acquisitions... the average time to deliver an initial program capability is **91 months**...”**



# DSB-Proposed IT Acquisition Model



Defense Science Board: DoD Policies and Procedures for the Acquisition of Information Technology, March 2009

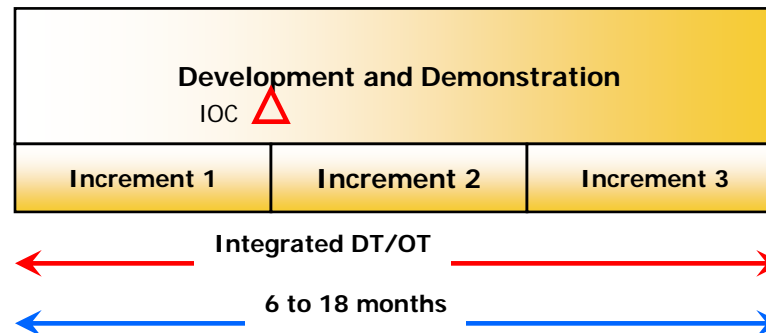
**“An analysis of 32 major automated information system acquisitions... the average time to deliver an initial program capability is **91 months**...”**



# Proposed IT Acquisition Model



Capability



New process, modeled on successful commercial practices

- Rapid, delivery of initial capability in ~12 months or less\*
- Multiple rapidly executed increments of capability
- Capabilities are sub-divided into multiple increments
- Tested and deployable if deemed suitable and survivable
- "Integrated DT/OT"

Defense Science Board: DoD Policies and Procedures for the Acquisition of Information Technology, March 2009

\* ***Current T&E processes won't support IOC in 12 months or less***



# DoD Goal for Integrated T&E



- “The goal of integrated testing is to conduct a seamless test program that produces credible qualitative and quantitative data useful to all evaluators, and to address developmental, sustainment, and operational issues”
- “Integrated testing allows for the collaborative planning of test events, where a single test point or mission can provide data to satisfy multiple objectives, without compromising the test objectives of participating test organizations.”

*From Interim Defense Acquisition Guide (DAG), 15 June 2009*



# Establish Integrated T&E



- **The way ahead to “Establish Integrated T&E”**
  - Establish an Integrated Test Team (ITT)
  - Design an Integrated T&E Model based on the program’s Acquisition Category (ACAT) and System Development Life Cycle (SDLC) phase
  - Initiate innovative approaches to testing
  - Develop an inclusiveness across the test continuum
  - Implement significant changes to the current T&E process



# Establish an ITT

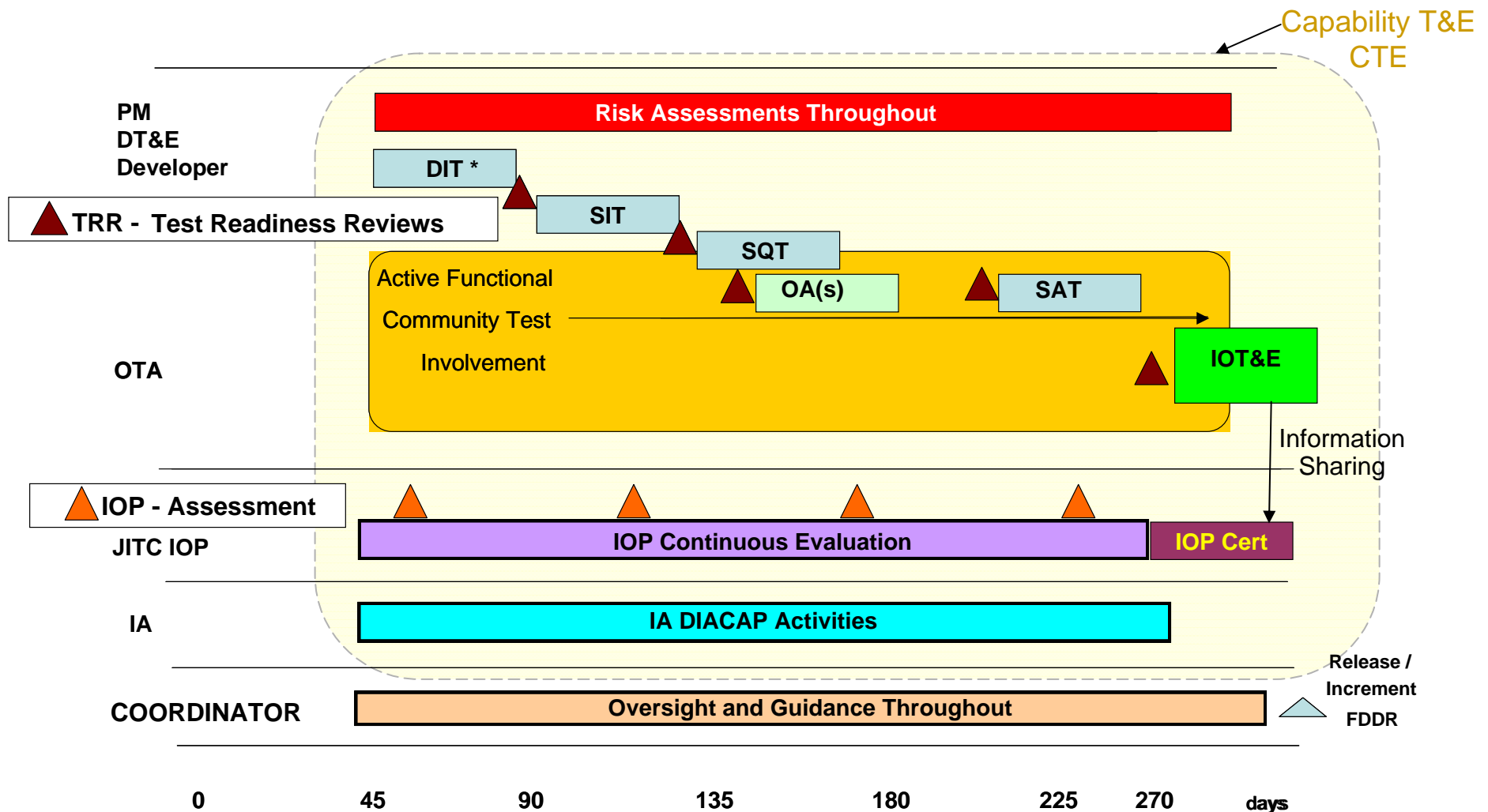


- **Establish the ITT Charter to define roles and responsibilities of participating members:**
  - Developmental Test & Evaluation (DT&E)
  - Operational Test & Evaluation (OT&E)
  - Information Assurance (IA)
  - Interoperability (IOP)
  - Functional Proponent (FP)
  - Program Management Office (PMO)
  - System Engineering (SE)
  - Configuration Management (CM)





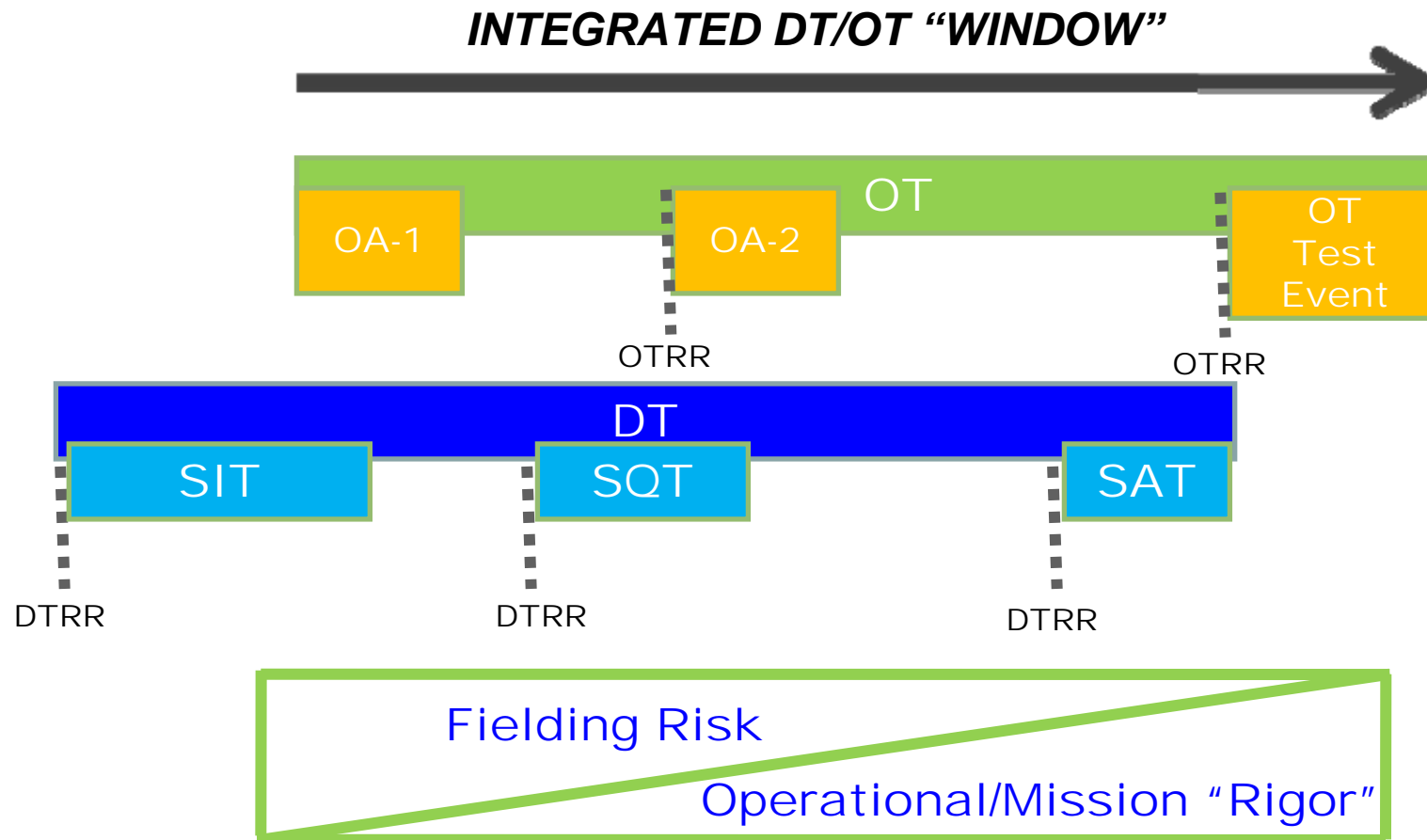
# An Integrated T&E Model



\* Developer Integration Test



# Integrated T&E Model Example (cont.)





# Desirable features of an Integrated T&E Model



- **Establish the ITT – who is on it, who chairs it, when was it formed (will be), what is its charter, how often will the charter be updated, and how often should the ITT meet?**
- **Establish testing strategies based on risk assessments and capability definitions**
- **Define events and be event-driven**
  - All events must contain action lists that are characterized by entrance and exit criteria
- **Evaluation methods and risk management approaches to govern the intensity of test events, to include when to do performance testing following large or small releases**
- **Define the test program's data management strategy**
  - What data elements need to be collected as well as when, and why they are needed
  - What tools are being used to share and leverage data amongst all T&E activities and organizations



# Establish Risk-Based Testing Strategies



- **Existing OSD policy supports risk-based T&E, to include support for T&E of envisioned rapid or agile IT acquisitions**
  - Examples are DOT&E Guidelines for OT&E of Software Intensive Systems, IA, and Net Ready Key Performance Parameter (NR-KPP)
- **However, significant reengineering, reorganization, and resourcing at the DoD Component level is needed to fully implement rapid or agile IT T&E across the enterprise**
  - Scalable, repeatable, rigorous T&E processes are required that are aligned to the assessed risk-based levels of testing for agile IT cycle times
  - Establishment of DoD Component Responsible Test Organizations (RTOs) needed to provide sufficient agile IT T&E expertise
  - Investment in tools required to support agile T&E planning, management, execution, reporting, and oversight efforts across the enterprise
    - Examples include information portals, automated test tools, and workflow management tools, that are accessible to the cognizant T&E enterprise



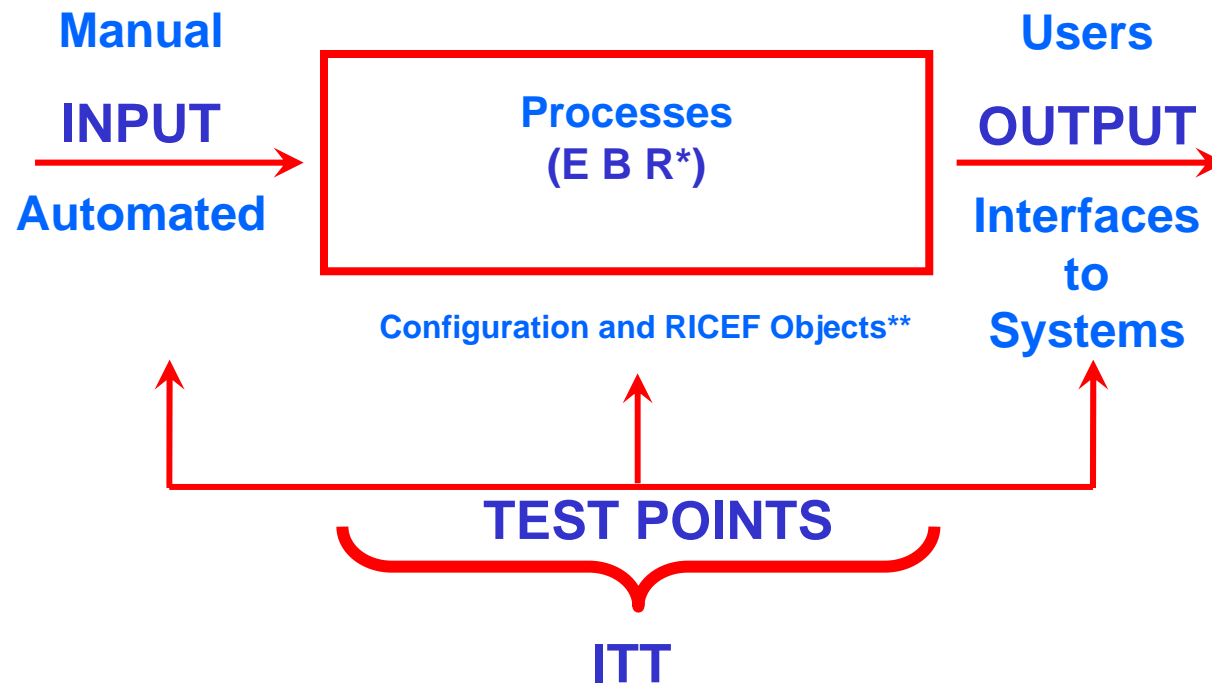
# Desirable features of an Integrated T&E Model (cont.)



- **A transition plan for established programs**
- **Product processes and product templates**
  - Briefing guides
  - Test plan
  - Report guides
  - RFP verbiage
  - Tool kits
- **Metrics, data sources, and collection methods that are measurable, aggressive yet realistic**
- **T&E budgeting process with rules of thumb driven by:**
  - Historical data
  - Test category of Work Breakdown Structure elements, i.e., custom development, modified and/or existing COTS and/or GOTS development, and/or integration effort
- **Establish detailed lists of documentation required to support T&E planning and execution**



# Integrated T&E Model should focus on Critical Risk Areas



\* Enhanced Business Rules

\*\* ERP example



# Summary



- **Integrated T&E Model success is based on active support of all agencies implementing an Integrated T&E Model for IT systems**
  - Needed to:
    - Be responsive to rapid, iterative development and evolving requirements/priorities
    - Provide testing that is appropriate to the identified level of program risk and capability based
    - Facilitate T&E planning, execution, and reporting timeframes that accommodate the rapid deployment strategy, e.g., using automated test tools
    - Identify and commit users to early participation
- **Additional analysis is needed to determine if changes are required to Title 10 and DoDI 5000.02 to facilitate a seamless and more efficient Integrated T&E Model**



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# Questions?





# Contact



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